GAME REPORT

Bobcat Management Surveys, 2003-2004

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BOBCAT MANAGEMENT SURVEYS 2003-2004

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By

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ABSTRACT

BOBCAT MANAGEMENT SURVEYS, 2003-2004

Mandatory bobcat export tagging was required for the 2003-2004 fur harvest season. Of 621 bobcats reported as harvested, 601 carcasses/jaws were received. Juveniles comprised 23% of the carcasses/jaws received. The harvest was essentially equal throughout the season (52% first half and 48% second half). Most bobcats were taken by trapping (60%) and Snaring (25%), 177 persons took bobcats during the season. Sex ratios were 1:1 (males/females). Population modeling indicates a stable to increasing population.

PREFACE

Data gathered during the fall and winter of 2003-2004 on Bobcat Management Surveys under Pittman-Robertson project W-95-R-36, Study 9516, Job 1 are analyzed and presented in this annual report.

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STUDY INTRODUCTION

The bobcat *(Felis rufus)* is an important furbearer in western South Dakota. Interest in hunting and trapping bobcat increased; along with average price of furs handled by South Dakota fur dealers (from $11.36 in 1971 to $465 in 1988). Harvest has fluctuated from a low of 62 in 1990-91 to a high of 621 in 2003-2004. Season lengths have varied widely since 1973 (Appendix 1) with the 2001-2002 season of 70 days the longest since 1976 when the season was statewide and 80 days long.

Present management consists of setting regulations on season length, season dates, location of harvest, take methods, and requirements for biological sampling. Biological information from the carcasses is used, along with computer modeling information and field reports on status of the bobcat population annually, to design the season.

STUDY OBJECTIVES

Objectives are to determine size and status of the bobcat population on an annual basis.

METHODS

State regulations required that within 5 days after being taken all harvested bobcat (both pelt and skinned carcass) be presented to a Conservation Officer or Extension Trapper for inspection and tagging before sale to a fur dealer. No person may buy or sell untagged bobcat pelts.

Bobcat carcasses were collected and sexed. Bobcat sex determination was done by external inspection of harvested bobcats by Conservation Officers, Animal Damage Control Trappers or other Department Personnel tagging bobcats and from external/internal inspection of carcasses and or jaws received by the author. The lower jaw in front of the first premolar was removed. Teeth were handled by the Game, Fish and Parks laboratory in Rapid City. Jaws were boiled and teeth were removed and aged.

In addition to examining each carcass, a digital caliper (accurate to 0.01 mm) was used to measure maximum root width (lateral to midline) to sex each bobcat. Also, the tooth root was inspected to age (juvenile or adult) the bobcat.

In past seasons, the dental cementum layer technique was used to determine bobcat age and thus population age structure. Age structure and sex ratio data by age class were used in the bobcat population model. In previous years, data

were submitted to the Minnesota Department of Natural Resources who modified a black bear population model to use on fisher, otter, and bobcat. Original procedures were taken from Fraser et al. (1982). Presently, the data is being modeled with the aid of STELLA, Version 8.0 (High Performance Systems, Inc.).

FINDINGS

A total of 601 carcasses/jaws were received out of a harvest of 621. This was a 63% increase in harvest from the 2002-2003 season. Twenty-three percent of the harvest was juveniles (Table 1).

Table 1. Age structure of harvested South Dakota bobcats, 2003-2004

Age	Number
Juvenile	135
Adult	465
Total	600

In the population model a 60% pregnancy rate was used for yearlings and 80% for adults, while illegal harvest mortality was assumed to be equal to 15% of legal harvest. The following mortalities by age class were used:

Summer: Kitten 40%; 1-2 years 10%; adults 5%.
Winter: Kitten 30%; 1-2 years 10%; adults 5%.

Also used in the model are total harvest by sex, sex ratios, and data for all previous years back through 1975. Results again indicate a stable to slightly increasing population.

Bobcats harvested during the December 13, 2003 through February 15, 2004 season are shown in Table 2. Butte, Harding, Mellette, and Pennington counties had the highest harvest (36%). Other counties that had bobcats tagged for them were Bennett, Butte, Corson, Custer, Dewey, Gregory, Haakon, Jackson, Jones, Lawrence, Lyman, Meade, Mellette, Perkins, Shannon, Stanley, Tripp and Ziebach. Nineteen percent were taken in the Black Hills compared to 16% the previous year.

Table 2. South Dakota bobcat harvest by county, 2003-2004.

County	Number Taken	Percent
Bennett	11	1
Butte	53	9
Corson	20	3
Custer	48	8
Dewey	7	1
Fall River	48	7
Gregory	21	3
Haakon	30	5
Harding	50	8
Jackson	44	7
Jones	3	>1
Lawrence	32	5
Lyman	10	2
Meade	49	8
Mellette	52	8
Pennington	69	11
Perkins	10	2
Shannon	28	4
Stanley	5	>1
Trip	4	>1
Ziebach	27	4
Total	621	100

The season dates allowed 9 weeks of harvest. The harvest was essentially equal throughout the season (52% first half and 48% the second half) as shown in Table 3. Method of bobcat harvest is shown in Table 4. Most bobcats were taken by trapping (60%), and Snaring (25%), followed by shooting (12%), dogs (1 %), and road kill (1 %).

Table 3. Dates of South Dakota bobcat harvest in 2003-2004.

Period	# Days	# Harvested	Percent
12/13 -12/28	16	145	23
12/29-1/13	16	176	28
1/14-1/29	16	151	24
1/30 -2/15	17	148	24
Totals	65	620	100

Table 4. Methods of South Dakota bobcat harvest in 2003-2004.

Method	Number	Percent
Trap	371	60
Snare	158	25
Shot	77	12
Road Kill	6	1
Killed by dogs	9	1
Total	621	100

* The tables were constructed using data from the field forms and/or the jaw envelopes.

One hundred seventy seven persons harvested bobcats during the 2003-2004 season. The most bobcats taken by one individual were 29. Fourteen people harvested 10 or more bobcats accounting for 39% of the harvest. Average number of bobcats taken per hunter/trapper was 3.5.

Bobcat was the primary target species for 92% of the people harvesting cats.

There were 306 males and 295 female bobcats harvested for a sex ratio of 1:1 (male/female). This sex ratio was similar to the 1.1:1 for the 2002-2003 season.

Following the criteria of Johnson et al. (1981), and Friedrich et al. (1983), open root canals were classified as a juvenile and a closed root canal was classified as an adult, there were 135 juveniles and 465 adult carcasses/jaws turned in. Furthermore, by setting the caliper at 5.45mm any tooth root (lateral to midline) that passed through would be classified as a female. Any tooth root that would not fit in the calipers would be classified as a male.

RECOMMENDATIONS

Past seasons it was necessary to dissect the entire carcass to get enough information on bobcats. However, based upon the validity of current studies it is feasible to obtain sufficient information to justify our seasons with the Scientific Authority of the U.S. Fish and Wildlife Service (CITIES) on an annual basis by inspection of lower jaws only. Furthermore, by eliminating the need to process and dispose of the entire carcass it will decrease both time involved and financial commitment. Age structures, sex ratios, population modeling and harvest data should continue to be collected. Current regulations would not be affected. The hunter/trapper would still be required to surrender the carcass within the five day period. Departmental Personnel would then remove the lower jaw and the hunter/trapper would retain the carcass for disposal.

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APPENDIX

Appendix 1. Historical bobcat season dates, lengths, unit, and harvest.

Year	Season Dates	Season Length (Days)	Unit	No. Bobcats Harvested
1973	Year long	365	State Wide	
1974	Year Long	365	State Wide	
1975	Nov. 8 - Feb. 29	114	State Wide	106
1976	Dec. 1 - Feb. 18	80	State Wide	85
1977	Dec. 15 -Jan. 15	32	West River	84
1978	Dec. 15 -Jan. 15	32	West River	167
1979	Dec. 15 - Jan. 15	32	West River *	237
1980	Dec. 15 - Jan. 15	32	West River *	132
1981	Closed			
1982	Dec. 1 - Dec. 31	31	West River	110
1983	Dec. 1 - Dec. 31	31	West River	81
1984	Closed			
1985	Closed			
1986	Dec. 13 - Jan. 11	30	West River **	140
1987	Dec. 12 -Jan. 10	30	West River	225
1988	Dec. 10 - Jan. 8	30	West River	151
1989	Dec. 9 - Jan. 14	37	West River	81
1990	Dec. 8 - Jan. 13	37	West River	62
1991	Dec. 14 - Jan. 12	30	West River	134
1992	Dec. 12 -Jan. 10	30	West River	162
1993	Dec. 11 -Jan. 16	37	West River	99
1994	Dec. 10 -Jan. 15	37	West River	166
1995	Dec. 9 - Jan. 28	51	West River	110
1996	Dec.14 - Jan. 31	49	West River	91
1997	Dec. 13 - Feb 15	65	West River	210
1998	Dec. 12 - Feb. 15	66	West River	134
1999	Dec. 11 - Feb. 15	67	West River	237
2000	Dec. 9 - Feb. 15	69	West River	249
2001	Dec. 8 - Feb. 15	70	West River	374
2002	Dec. 14- Feb. 15	63	West River	391
2003	Dec. 13-Feb. 15	65	West River	621

* Corson County Closed
** Only 11 West River Counties Open